SOMO/BEACON Space Internet Protocols (SIP) Testbed
RdJ Summary Notes from May 31, 2001 Telecon

Participants:
ARC: Ken Freeman, Thom Stone, Matt Spence, Dick desJardins
GRC: Will Ivancic
JPL: Lee Torgerson
GSFC: Rick Schnurr
MSFC: Ken White

1. Discussed the proposal that GRC (Ivancic) sent in, to test space internet transport protocols TCP, SCPS-TP and Multicast FTP (MFTP) over IP. JPL will be participating in these tests and also proposing to test the same transport protocols over SCPS-NP, which can signal whether packet loss is due to errors or congestion.

2. SCPS implementations are available that run under VX-works on SPARC platforms (available from JPL), and under Windows NT on Intel platforms (available from Avtec). Bob Durst and Eric Travis also have an implementation that runs on Linux platforms.

3. Below are the tests tentatively identified by or for each center as its initial focus of interest. Some of these are just our working hypothesis as to the center's main interests, to be confirmed by center representatives assigned to participate in testbed activities.

(a) GRC:
      (i) SCPS-TP, TCP, and MFTP over IP. JPL proposes to participate in this activity also, helping to implement the same tests over SCPS-NP.

(b) JPL:
      (i) CFDP core protocol. Extended procedures are not being tested now, but would evolve into the "bundle" concept being developed within IRTF.
      (ii) IP over various CCSDS stacks.
      (iii) Participate in SCPS vs anything else. Plan to use Protocol Test Lab (PTL), which contains Motorola 68000 flight qualified platform running VX-works, Linux boxes, Adtech link bit error simulator.

(c) GSFC:
      (i) CCSDS link protocol and HDLC over space links. Plan to use OMNI Flatsat testbed, maybe the UoSsat-12 satellite, as part of the SIP testbed.

(d) ARC:
      (i) Mission and application requirements.
      (ii) Space network routing protocols, DNS, addressing requirements.

(iii) Legacy space protocols (e.g., clock and data) over IP.
(iv) SIP Testbed network.

(e) MSFC:
(i) Participation is from the Advanced Technology Group laboratory at MSFC, Ken White, lead. MSFC operates the NASA Protocol Network (NPN), which together with NREN will provide the network infrastructure for the SIP testbed.

(f) JSC (?):
(i) HEDS/ISS protocol testbed activities.

Non-NASA related activities (?):

(g) Post-154 testbed (NRL, GRC, GSFC, Loral Skynet, Lockheed Martin).

(h) CCSDS testbed (ESOC, NASDA, CNES, JPL, GSFC).

4. Discussion with Rick Schnurr of need to get GSFC nuts-and-bolts people involved, e.g., Keith Hogie, Dave Israel, Tim Ray (?)

5. At next week's telecon (6/7), we will focus on stimulating the submission of more real proposals a la the one from GRC, and we will attempt to identify each center's lab(s) that would participate in testbed activities. These are questions that will be asked:

(a) What are you testing now? How could that be extended for participation by other centers?

(b) Identify and provide description of the lab(s) that would be part of your center's participation in the testbed:
(i) Identification of lab(s) (name, website)
(ii) People involved (point(s) of contact (POC) info)
(iii) Narrative description of lab (purpose, organizational relationships)
(iv) Schematics, equipment/software lists, software configurations
(v) Network connectivity, protocols supported